

APRIL/MAY 2023

**CEEL54A/BEEL54A/UEEL54A — MEDICAL
ELECTRONICS**

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define the term bio-electricity.
2. Define CMRR ratio.
3. Define the term bio-potential.
4. Define the term recording.
5. Define Respiration rate.
6. Define blood pressure.
7. What is meant by diagnostics?
8. Define the term high energy radiation.
9. Define diathermy effect.
10. What is the principle of high frequency heat therapy?

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Illustrate the basic requirements of bio-amplifier.

Or

- (b) Explain the instrumentation amplifier.

12. (a) Write a note on EEG.

Or

- (b) Write a short note on ERG.

13. (a) Give a brief note on measurement of heart beat rate.

Or

- (b) Summarise procedure of plethsmographic technique.

14. (a) Write a short note on the application of Radiation.

Or

- (b) Illustrate the applications of LASER in Biological medium.

15. (a) Discuss the benefits of diathermy?

Or

- (b) Write a short note on Microwave Diathermy with neat sketch.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss the necessity for special types of amplifiers for biological signal amplification.

17. Discuss the electrodes used for ECG recording.

18. Discuss the detail about patient monitoring set.

19. Explain the diagnostic and therapeutic uses of radioactive isotopes.

20. Explain the working of ultrasonic diathermy unit with the help of neat block diagram.